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ABSTRACT

Integrating critical thinking and reasoning skills with content in the humanities and the social science curricula at the postsecondary level invites students to become co-participants in discovering and constructing knowledge as members of a learning "community." Readers of the research literature on critical thinking confront many definitions and interpretations of critical thinking, not to mention considerable debate about what thinking skills are involved and how they should be taught. The common ground among critical thinking theorists is the belief that teaching critical thinking must be integrally related to some form of content knowledge. Instructors ought to begin to teach the philosophy or structure of their disciplines, be it history, sociology, or literature, in addition to examining the various ways that arguments are constructed and evidence used to substantiate statements and knowledge claims. Critical thinking skills can be taught most effectively in an interdisciplinary curricula in which critical thinking is valued and established as an educational goal and where faculty reach a consensus on a pedagogy to teach reasoning skills across the disciplines. An interdisciplinary curricula in critical thinking should teach students to think and make judgments in different interpretive frames, to step outside of preconceived and limited thinking patterns. A major pedagogical goal of a critical thinking curriculum must be to problematize received knowledge and paradigms by engendering a critical spirit in institutions and in classrooms, not in a way that devalues inherited knowledge and values, but in a way that enriches them. (RS)

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Epistemology and Determining Critical Thinking Skills in the Disciplines

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Paper Presented at the 1992 Annual Conference of the Institute for Critical Thinking at Montclair State University, Montclair, NJ.

In keeping with the conference theme on teaching critical thinking as an educational ideal, my paper will focus on teaching thinking skills in the content area and in an interdisciplinary curricula at the postsecondary level. In a spirit of critique, I will examine some of the theoretical issues involved in defining critical thinking, offer certain principles and concepts that I believe are significant, and propose a theoretical model for teaching critical thinking in an interdisciplinary core curricula.

Finding a group of educators who agree on a definition of critical thinking is a difficult task. Reading the research literature, one confronts many definitions and interpretations of critical thinking, not to mention considerable debate about what thinking skills are involved and how they should be taught. Some faculty believe that critical thinking is simply good thinking, and insist that you either have it or you don't, and what good students do is, in fact, critical thinking. To paraphrase one commentator: one man or woman's critical thinking is another's critical inquiry or critical reflection. For faculty with an ideological agenda or a belief in the presence of an overt irrationality in human affairs, or a belief that difference, whether it be on the basis of gender, class, race, or culture, involves different kinds of thinking or learning, some definitions of critical thinking with

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their emphasis on a common rationality and reason assessment criteria can be a problematic if not outright unacceptable educational goal, one tainted by a covert authoritarian or ethnocentric approach to learning.

This semester I have been teaching Plato's dialogue Gorgias in a critical thinking course integrated with an Introduction to Philosophy course. My students have been analyzing Socrates' use of analogical reasoning to compare and contrast oratory/sophistry and philosophy. Simultaneously, I am engaged in defining critical thinking and happily these metaphors for knowledge have begun to mix. Early in the dialogue, Socrates draws analogies between the health of the body and the health of the soul. At one point, Socrates refutes Polus and Callicles' contention that they can teach orators what is just or good and he goes about proving, in true Socratic fashion, that oratory is concerned primarily with giving pleasure or gratification, to make individuals seem, not be, virtuous in their souls. Socrates compares what is good or healthy for the soul to what is good for the body; gymnastics and medicine make the body fit and cosmetics and cooking make it appear fit. The former he refers to as "crafts" and the latter as "knacks." A craft is concerned with making the soul be fit or virtuous and a knack with giving the appearance of fitness. A craft focuses on learning persuasion or episteme and a knack(oratory) on conviction persuasion or pistis, telling an audience what they want to hear. A craft teaches; it thoroughly investigates the nature of its object and gives an account of what it does. For Plato, philosophy

is the premier craft. Needless to say, I thought this was an excellent analogical framework in which to pursue a theory of critical thinking. Thus, I began to examine critical thinking in Platonic terms, e.g. Is it a craft or is it a knack? Is it something that makes the soul or mind more fit or does it give the appearance of fitness and serve, as some of its critics have pointed out, simply as the latest intellectual and educational fad, a reputed panacea for all of our educational ills?

It is important for anyone teaching critical thinking to address the above question in some form, Platonic or not. As critical thinking instructors, we must constantly reevaluate the theory underlying our curriculum and pedagogy and the instructional paradigms and methods we employ to teach critical thinking. Much of the ground-breaking has already been done by key theorists, so there are few excuses for minimizing the subject by not acknowledging the substantive research in the field, and settling for half-baked concepts, which is why, I believe, the domain of epistemology is the first place to shine our light. In doing so, I will contend that critical thinking is, in the Platonic sense, a craft, one that is deeply rooted in the humanities, social sciences and the liberal arts as critical inquiry, a primary methodological tool for discovering knowledge. But first I want to situate myself in the historical and intellectual background that has fueled and continues to generate considerable debate about critical thinking theory and its application.

In recent years, the work of at least four theorists stand out

above the rest and fuels the current theoretical debates. In the eye of the storm for the past ten years has been John McPeck, the author of Critical Thinking in Education (1981). McPeck has proposed that critical thinking skills are "content specific" and, therefore, embedded in the discourse, logic, rationality and reasoning processes associated with a specific subject. According to McPeck, there is no way to learn these different logics apart from learning the language or meaning of those subjects (36). Thus, to know a discipline, according to McPeck, is to know the language of that specific world (McPeck uses Wittgenstein's concept of a "language game"), to be able to "talk" history, biology or philosophy, and to discover that "different modes of reasoning constitute what we call 'subject areas'" (37).

On the other hand, Robert Ennis has argued that critical thinking involves specific skills proficiencies, dispositions, and assessment criteria that are generalizable across disciplines and to other learning contexts, including the non-academic. Ennis's ideas have been used by some to justify the creation of a general critical thinking skills curriculum that teaches thinking skills or proficiencies distinct from specific content. In a recent essay, Harvey Siegel lends his support to Ennis's position and argues that critical thinking is generalizable across disciplines because underlying the concept of critical thinking is a "unitary epistemology" associated with the "reason assessment component" (Norris 104-105). According to Siegel, it is this epistemology that is generalizable and "that provides the theoretical underpinning of

our understanding of the principles and criteria of reason assessment to which we appeal when thinking critically," and it "is shared throughout the domains or fields in which critical thinkers assess reasons; it underlies our best conception of what critical thinking is" (Norris 105). Furthermore, this epistemology relates only to whether reasons are good reasons" and "if (and only if) they afford warrant to the claims or propositions for which they are reasons" (Norris 102). If I understand Siegel correctly, even though there may be different claims in different fields, there is only one epistemology applied and that is based on reason assessment.

Siegel's epistemological theory of reason assessment provides justification for teaching across domains as well as my conception of an interdisciplinary curricula with critical thinking as an educational objective. Equally significant is the fact that he supports the generalizability of the critical spirit or disposition across subjects and domains, a position articulated and defended with considerable force by Richard Paul (Norris 106). From my perspective, there is a common epistemological basis in the work of each theorist, and Siegel's idea of an "unitary epistemology" provides the proverbial "common ground."

I've noticed that some curriculum developers and instructors are often hesitant to analyze the epistemological basis of a discipline or subject. However, in doing so, they can identify its inherent modes of reasoning and methods for evaluating knowledge claims and propositions. Also, many instructors believe strongly

and rightly that a critical spirit must be communicated to students in the classroom in order for students to learn to examine their values, preconceptions, worldviews, and biases. But critical thinking, in my view, is more than this, and there are caveats to be heeded. For example, if there is less emphasis on epistemological claims and argumentation and more on belief and opinion, this may come close to what Plato would call a knack, a pedagogy more concerned with teaching for conviction/persuasion rather than learning or developing knowledge. At its worse, it could foster a "politically correct" notion of critical thinking. In this atmosphere, the "party line" takes precedence and students and professors may be encouraged to espouse unexamined opinions and biases that mask as truths. Obviously, instructors should be critical thinkers, first and foremost, and establish rigorous intellectual criteria to guide them in identifying their preconceptions, so as to insure that they are not simply indoctrinating students, or giving them a license, to use the vernacular, "trash" another's argument or personhood. To this end, students should learn the difference between a knowledge claim and a belief. For example, Professor Alan Kennedy of Carnegie Mellon University commented recently in an article in Liberal Education: "When our students are not led into conflicting argumentative positions, they unfortunately fall back on enunciating their beliefs; it is not uncommon for a graduating senior to be unable to distinguish between a statement of belief and an argument about the validity or reasonability of a belief" (34). Such observations

attest to the need to establish critical thinking as an educational ideal, to place it at the heart of general education and interdisciplinary curricula.

The common ground among critical thinking theorists is the belief that teaching critical thinking must be integrally related to some form of content knowledge. This is McPeck's position as well as the cognitive psychologist, Robert Sternberg, both of whom believe that to be engaged in thinking is to be thinking about something, and not simply applying skills or dispositions in an content-free area. Sternberg has indicated both in The Triarchic Mind and Metaphors of Mind that good reasoners have not only good procedural knowledge, but also substantial content knowledge as an essential foundation for reasoning well. What is also significant in Sternberg's triarchic theory, besides the knowledge acquisition component, is the performance component of intelligence that assesses what one does with knowledge; this has great application when we ask students to write and reason on complex issues across disciplines and topics. Sternberg's ideas are especially useful for evaluating critical thinking, but also for establishing a theory. According to him, teachers and the entire testing empire are more concerned with assessing what students know rather than with assessing and evaluating how they perform with what they know. In a sense, teaching critical thinking or reasoning skills explicitly requires students to perform with the skills, not unlike what a musician may do or an artist during the composing process.

My theory of critical thinking draws from both McPeck and

Sternberg, as well as Richard Paul and is founded on the principle that content, epistemology and pedagogy are inextricably connected, and that teaching thinking skills or reasoning skills is and must become a vital part of content instruction by examining the epistemology of the discipline. In other words, and here I agree with McPeck, instructors ought to begin to teach the philosophy or structure of their disciplines, be it history, sociology, or literature, in addition to examining the various ways that arguments are constructed and evidence used to substantiate statements and knowledge claims. In doing so, instructors can illustrate for students how "discipline-specific" problems are represented, and reasons, knowledge statements and propositions are made and assessed within this disciplinary framework. Such disciplinary soul-searching allows instructors to rediscover how knowledge is in flux, subject to what Thomas Kuhn calls a paradigm shift, and often constructed and codified by institutions or discourse communities. Thus in designing a critical thinking curricula, one must first apply the concept to her discipline and subject it to an epistemological critique. (See Gerald Graff's Professing Literature : An Institutional History).

Designing an interdisciplinary curricula on an epistemological framework of reason assessment and argumentation, would define critical thinking as a craft. This pedagogical approach engages students and teachers in inductive and deductive reasoning and problem solving activities that foster an understanding of both procedural and declarative knowledge. In addition, a dialectical

method of teaching reinforces critical dispositions, and an openness to question and challenge beliefs and ideas in the classroom. This epistemological approach reaffirms the common ground that I think exists in the work of most theorists and is best articulated in Harvey Siegel"s position: "that critical thinking has (at least) two central components: a reason assessment component, which involves abilities and skills relevant to the proper understanding and assessment of reasons, claims, and arguments; and a critical spirit component, which is understood as a complex of dispositions, attitudes, habits of mind, and character traits... " (Norris 97). For Siegel, a major objective in a critical thinking course would be for students to become individuals who are appropriately moved by reasons in different contexts, a pedagogical goal for an interdisciplinary curricula.

Theoretically, I am in partial agreement with McPeck, especially concerning the proposition that developing students' critical thinking skills and critical dispositions can best be addressed by examining the epistemology of a discipline; and, like McPeck, I believe that these thinking skills are best taught through "the structure of disciplines" and then transferred through direct instruction into other subject areas. McPeck has been influenced by Jerome Bruner's work in curriculum theory, especially his book <u>The Process of Education,</u> and Bruner's idea that "the broad concepts and principles which codify a discipline come closer than any available alternative to solving the problem of transfer of learning" (49). This approach reinforces the traditional

educational goals of a liberal arts education and the belief that in mastering the concepts and principles of one discipline one can learn to apply them in other subject areas.

To my mind critical thinking skills can be taught most effectively in an interdisciplinary curricula in which critical thinking is valued and established as an educational goal and where faculty reach a consensus on a pedagogy to teach reasoning skills across the disciplines. Ideally, students learn to examine how arguments are constructed and how truth claims made in one discipline are either different from or similar to those made in other subjects. In examining the foundations of a discipline to establish pedagogical objectives, instructors can identify the primary metaphors associated with learning and meaning-making in their fields, (see Sternberg's Metaphors of Mind) and how they reinforce learning. By recognizing how the construction of knowledge is related to the epistemology of the discipline, and by identifying the thinking skills and metaphors associated with a discipline, an instructor provides students with what Sternberg would call a "language of cognition."

Typical questions that can establish a theoretical exploration for developing an interdisciplinary critical thinking curriculum are: What is the basis of knowledge in this subject? How do we come know to something? How do we verify it? What metaphor best describes learning in this context? What are the parameters or borders of the discipline and how do they interact or overlap with other subjects? What are the limitations of knowing in the subject?

And, finally, what are the primary narrative structures in the discipline, through what kinds of stories is reality represented? Such questions are related to what the historian Peter Stearns sees as the pedagogical distinction between knowledge as constructed and transmitted. In a 1992 Liberal Education article entitled "Linking Humanities Research and Teaching" Stearns reminds us that "the challenge of critical assessment of the bases of truth claims in the humanities is a real one, and it should be built into the educational process" (25). What Stearns proposes as a way of stimulating student involvement in discipline-specific learning is an emphasis on broad "interpretive issues among cultural systems and in various representations rather than a canon to be mastered and revered"(27). According to Stearns, such teaching would provoke by raising the question "Why are we doing this?" rather than the canonical response from traditional instructors "we know what values are good for you" (27). Thus knowledge itself becomes problematic and a pivotal point for teaching within the discipline; such instruction challenges the reification of knowledge and the illusion of its universality and objectivity. One can envision the creation of an interdisciplinary curricula in the humanities that includes the new historicism, cultural studies, and interpretative anthropology as provocative areas of study.

Once disciplinary concepts and skills are integrated and explicitly taught with content, they shape and challenge a students' ability to reason, assess and argue within this conceptual framework. From my perspective, and here I have some

problems with McPeck's position, one does not learn to reason and think in a specific content area and not learn to apply this reasoning criteria in some form to other academic and non-academic contexts. Therefore, I cautiously walk the middle ground between two pedagogical and theoretical worlds, a proponent of the "mixed approach" to teaching critical thinking that simultaneously advocates infusing and teaching critical thinking and content-specific skills that then can be transferred to other contexts through direct instruction. For example, in learning to speak and think the language and concepts of history through analyzing primary texts one is employing reasoning skills used in the interpretation of literature, namely the ability to decode and interpret figurative and symbolic language. For example, Stearns proposes an interdisciplinary core course in literature and history based on cultural analysis through significant literary and historical settings. Such a course may examine the function of rhetorical modes and discursive reasoning in interpreting data, and the relationship between literary and historical narratives and how hypothetical and critical questions are formulated in each subject.

In developing a model curriculum in history and literature, the work of Hayden White is of special interest here. In Tropics of Discourse White speculates that history and literature are similar in that they are both about interpretation and discourse that is often self-reflexive and that is "as much about the nature of interpretation itself as it is about the subject matter which is the manifest occasion of its own elaboration" (4). White proposes

asking the types of questions that are at the root of historical inquiry and epistemology and that could very well serve as models of inquiry for other disciplines: "What is the epistemological status of historical explanations, as compared with other kinds of explanations that might be offered to account for the materials which historians ordinarily deal? What is the structure of a peculiarly historical consciousness?" (81). White insists that historians "emplot" or configure events in a manner that resembles a literary structure similar to what he calls the "pregeneric plot structure" associated with the archetypal myths defined by the literary critic, Northrop Frye (83). For White, historical narratives and literary texts have much in common, especially that they are "verbal fictions, the contents of which are as much invented as found..." (82).

Designing curricula to address the above issues may include an examination of the differences and similarities between literary and historical representations and problems, and, following White, analyze the use of rhetorical modes, figurative language, and narratives. In this course students would use similar reasoning skills and critical dispositions to examine concepts, interpret and analyze texts, and evaluate how discourse is used to construct meaning in both subjects and, in both subjects students would confront the closed world of the text that would devalue prior knowledge. Similarly, questions of interpretation may be applied to other subjects such as anthropology to investigate issues surrounding how various cultures construct meaning (Stearns, 26).

One of the most challenging interdisciplinary curricula that I have encountered as a model for teaching critical thinking and reasoning skills is one conceptualized by Robert Scholes in a recent College English article. The curricula is rooted in the liberal arts tradition and is centered on rhetoric, grammar, and the dialectic and "organized around concepts, precepts and practices rather than a canon of texts" (767) The proposal is derivative from Scholes' classic work Textual Knowledge that advocates changing English curricula in order for students to become producers rather than consumers of texts. In his ideal curriculum, Scholes first theme or topic would be "Language and Subjectivity" and would deal with problems of subjectivity and as he says, "put language and textuality at the center of the educational experience." The second theme "Representation and Objectivity" would analyze the discourse of science and the meta-discourse of various disciplines and the last "System and Dialectic" would address the philosophy of science, history, or literary criticism. The possibilities here are rich for teaching critical thinking, either in traditional humanities discipline such as history or literature or in an interdisciplinary context.

In designing an interdisciplinary curricula to address critical thinking it is imperative that instructors teach students a topic from different disciplinary viewpoints. This exposes students to conflicting knowledge claims and uses of evidence and provides an opportunity to assess and evaluate reasoning criteria in different subjects and make judgments. When students are

confronted with conflicting arguments and positions, it challenges egocentric and ethnocentric thinking and fosters a critical spirit, a major objective of critical thinking programs according to Richard Paul, a strong advocate of dialectical thinking. When students witness professors argue a topic from different contexts or subject areas, it serves to model how arguments are constructed and propositions validated and it reinforces a critical disposition that ignites the desire to know and participate.

Needless to say, an interdisciplinary curricula in critical thinking ought to teach students to think and make judgments in different interpretive frames, to step outside of preconceived and limited thinking patterns, as Scholes would have it. Essentially, this constitutes teaching critical dispositions or what Richard Paul calls the critical spirit. Naturally, all teachers know that students evaluate abstract statements and questions differently if they are reframed within a context or frame that they are familiar with. It should come as no surprise that the way questions are framed often determines the quality of the response. For example, in Acts of Meaning Jerome Bruner's proposes that the statement "History is the story of class struggle" cannot be judged or evaluated by questions such as "does that assertion get it right? Instead one needs to ask "what would it be like to believe that? or what would I be committing myself to if I believed that?" (26). These kinds of "perspectival and pragmatic questions," as Bruner calls them, are essential to stimulate the creative responses that require students to suspend judgment and view things from different

frames of reference and with an imaginative eye. This pedagogy is not new; it strikes one as modern version of what Keats would have called "negative capability." However, such teaching is rare yet when one witnesses it, it is a reaffirmation, in a Platonic sense that this is what the craft of teaching is really all about.

Integrating critical thinking and reasoning skills with the content in the humanities and the social sciences curricula invites students to become co-participants in discovering and constructing knowledge as members of a learning "community." Students learn how to evaluate and construct arguments and maneuver through the minefield of conflicting ideas and beliefs in the act of what Richard Paul calls "reflective-self criticism," an act that necessitates detachment. Through creating assignments and topics that are thematically constructed to reveal contradiction and conflicts about what knowledge is, instructors can utilize what anthropologists call the ability to "destabilize" knowledge in order to construct new ways of seeing. One could envision a interdisciplinary critical thinking course that would address the topic of subjectivity and narrative construction in a number of disciplines, including ethnography, and the indeterminacy of meaning in scientific and literary texts.

Finally, a major pedagogical goal of a critical thinking curricula must be to problematize received knowledge and paradigms by engendering a critical spirit in institutions and in classrooms, not in a way that devalues inherited knowledge and values, but enriches it. This pedagogy demands that instructors become

ethnographers, moving into what Giroux and other critical theorists refer to as "border" regions where disciplines, claims and truths intersect. There, they can reexamine the subjectivity of their narrative recreations of knowledge, teaching, and learning and reenvision once again a cherished place for critical inquiry in higher education. Once again, the classroom will become a place where students and teachers are creating meaning together, learning from each other, and examining how values, beliefs, and ideology are implicated in what it is we purport to know and teach. By critically evaluating their beliefs and epistemology, and acknowledging their own and students' narrative constructions of the world, be they historical, social, cultural, literary, or personal, teachers become critical thinkers, invested in reshaping learning and discovering knowledge, teaching students how critical thinking or critical inquiry is in the nature of what one does when one thinks, a la McPeck, like an historian, sociologist, political scientist, mathematician or literary critic. In doing so, students discover the best part of themselves in their imagination and creativity. In this way teachers are involved in the creation and practice of a craft, one that sets high ideals and demands what is best for the intellectual well-being of students and themselves as teachers. And unlike a Platonic "knack" that gratifies and pleases, that plays to the crowd, telling them what they want to hear, the craft of teaching critical thinking as an educational ideal puts all received truths to the test in order to foster intellectual growth and autonomy.

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